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Executive Body for the Convention on Long-range Transboundary Air Pollution

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Report of the Executive Body on its forty-second session

Addendum

Decision 2022/1

Adoption of the updated Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution

The Executive Body,

Recognizing the need for guidance on reporting emissions and projections to ensure reliable emission data both for the purpose of reviewing Parties' compliance with their obligations under the protocols and as a basis for scientific work to further develop abatement strategies under the Convention,

Referring to the Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution approved by the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe and the Working Group on Effects at their eighth joint session (Geneva, 12−16 September 2022),

1. *Adopts* the Guidelines contained in document ECE/EB.AIR/GE.1/2022/20−ECE/EB.AIR/WG.1/2022/13, as amended during the session, for application in 2024 and subsequent years;

2. *Decides* that these revised and adopted Guidelines are considered within the specification of the applicable guidelines referred to in paragraph 2 of Executive Body decision 2022/2;[1]

3. *Encourages* Parties to provisionally apply the Guidelines as contained in the annex to the present decision.

[1] Available at https://unece.org/decisions.

Annex

Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution

I. Objectives

1. The objectives of these Guidelines are to:

(a) Assist Parties, through a common approach, in meeting their reporting obligations under the 1979 Convention on Long-range Transboundary Air Pollution and its protocols;

(b) Support the preparation and evaluation of emission reduction strategies;

(c) Provide solid input for air quality and effects modelling;

(d) Facilitate the technical review of air pollutant emission inventories, in accordance with the methods and procedures for the technical review of air pollutant emission inventories reported under the Convention and its protocols (EB.AIR/GE.1/2007/16), as approved by the Executive Body for the Convention at its twenty-fifth session (Geneva, 10–13 December 2007);[1]

(e) Allow for the effective assessment of compliance with emission obligations and reporting requirements under the Convention's protocols by the Convention's Implementation Committee;

(f) Facilitate the harmonization of emission reporting with reporting under other relevant multilateral environmental agreements and relevant European Union legislation.

II. Principles

2. Parts of these Guidelines reflect legal obligations for reporting under the Convention and its protocols in force, as further substantiated by Executive Body decision 2022/2[2] adopted at its forty-second session (Geneva, 12–16 December 2022). The Executive Body may adopt subsequent decisions to alter, strengthen or otherwise clarify the content and legal basis of the Guidelines.

3. Parties are formally only required to report on the substances and for the years set forth in the Convention and the protocols and their amendments that the Parties have ratified and that have entered into force for them. The Guidelines should not be understood to imply that the reporting obligations of a specific protocol apply to a Party to the Convention that is not a Party to that protocol.

III. Definitions

4. The term "Parties" in the Guidelines refers to Parties to the Convention, unless otherwise specified.

5. In the context of the present Guidelines (and applicable to both emission inventories and projections):

[1] ECE/EB.AIR/91, para. 27 (m).

[2] All Executive Body decisions referred to in the present annex are available at https://unece.org/decisions.

(a) "Transparency" means that the data sources, assumptions and methodologies used for an inventory should be clearly explained, in order to facilitate replication and assessment of the inventory by users of the reported information. The transparency of inventories is fundamental to the success of the process for the communication and consideration of the information. The use of the Nomenclature For Reporting (NFR) tables and the preparation of a structured Informative Inventory Report (IIR) contribute to the transparency of the information and facilitate national and international reviews;

(b) "Consistency" means that an annual inventory should be internally consistent for all the reported years for all elements across sectors, categories and pollutants. An inventory is consistent if the same methodologies are used for all of the years of the inventory and if consistent data sets are used to estimate emissions. For projections, consistency also means that a year of the submitted inventory is used as a base year;

(c) "Comparability" means that estimates of emissions reported by Parties in their inventories should be comparable. For that purpose, Parties should use the accepted methodologies as elaborated in section V below and the NFR formats for making estimations and reporting their inventories;

(d) "Completeness" means that an annual inventory covers at least all sources, as well as all pollutants, for which methodologies are provided in the latest EMEP/EEA Air Pollutant Emission Inventory Guidebook[3] (EMEP/EEA Guidebook), or for which supplementary methodologies have been agreed to by the Executive Body. "Completeness" also means the full geographical coverage of the sources of a Party. Where numerical information on emissions under any source category is not provided, the appropriate notation key, as defined in paragraph 12 below, should be used when filling in the reporting template and the absence of numerical information should be documented;

(e) "Accuracy" means that emission estimates should be accurate in the sense that they are systematically neither over nor under true emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Appropriate methodologies should be used, in accordance with section V below, to promote accuracy in inventories.

6. "Key categories" for a given substance means a source category of emissions that has a significant influence on a Party's total emissions in terms of the absolute level of emissions of that substance, the trend in emissions over a given time period and/or, for a tier 24 key category analysis, the uncertainty in the estimates for that Party. The concept of key categories is an important aspect in inventory development in that it helps to identify priorities for resource allocation in data collection and compilation, quality assurance/quality control and reporting.

7. The substances for which there are existing reporting obligations in the Convention and the protocols, as further specified by Executive Body decision 2022/2, include:[5]

(a) "Sulfur", which means all sulfur compounds expressed as sulfur dioxide (SO_2) (including sulfur trioxide (SO_3), sulfuric acid (H_2SO_4), and reduced sulfur compounds, such as hydrogen sulfide (H_2S), mercaptans and dimethyl sulfides, etc.);

(b) "Nitrogen oxides" (NO_x), which means nitric oxide and nitrogen dioxide, expressed as nitrogen dioxide (NO_2);

(c) Ammonia (NH_3);

(d) "Non-methane volatile organic compounds" (NMVOCs), which means all organic compounds of an anthropogenic nature other than methane, that are capable of producing photochemical oxidants by reaction with NO_x in the presence of sunlight;

(e) Carbon monoxide (CO);

[3] Available at www.eea.europa.eu/emep-eea-guidebook.

[4] For definitions of tier 1, tier 2 and tier 3 methodology, see www.eea.europa.eu/emep-eea-guidebook.

[5] Any departure from the definitions provided in this paragraph should be clarified in the Informative Inventory Report (IIR).

(f) "Particulate matter" (PM), which is an air pollutant consisting of a mixture of particles suspended in the air. These particles differ in their physical properties (such as size and shape) and chemical composition. "Particulate matter" refers to:

(i) "$PM_{2.5}$", or particles with an aerodynamic diameter equal to or less than 2.5 micrometres (μm);

(ii) "PM_{10}", or particles with an aerodynamic diameter equal to or less than 10 μm;

(g) Cadmium (Cd) and its compounds;

(h) Lead (Pb) and its compounds;

(i) Mercury (Hg) and its compounds;

(j) Polycyclic aromatic hydrocarbons (PAHs). For the purposes of emission inventories, the following four indicator compounds shall be used: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene and indeno(1,2,3_cd)pyrene;

(k) "Dioxins and furans" (PCDD/F), which are polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF), tricyclic, aromatic compounds formed by two benzene rings, connected by two oxygen atoms in PCDD and by one oxygen atom in PCDF, the hydrogen atoms of which may be replaced by up to eight chlorine atoms;

(l) "Polychlorinated biphenyls" (PCBs), which means aromatic compounds formed in such a manner that the hydrogen atoms on the biphenyl molecule (two benzene rings bonded together by a single carbon-carbon bond) may be replaced by up to 10 chlorine atoms;

(m) Hexachlorobenzene (HCB), Chemical Abstracts Service (CAS) Registry Number 118-74-1.

8. Substances for which emission reporting is encouraged include:

(a) "Black carbon" (BC), which means carbonaceous PM that absorbs light;

(b) Total suspended particulate matter (TSP);

(c) Arsenic (As), chromium (Cr), copper (Cu), nickel (Ni), selenium (Se) and zinc (Zn) and their compounds.

9. "Large point sources" (LPS) are defined as facilities[6] the combined emissions of which, within the limited identifiable area of the site premises, exceed the pollutant emission thresholds identified in table 1 below. These thresholds have been extracted from the full list of pollutants in the European Union European Pollutant Release and Transfer Register (E-PRTR) Regulation and its annex II.[7] Any revisions or updates to the E-PRTR Regulation, such as changes to thresholds, shall also be applied to the definition of LPS. It is encouraged to include in LPS reporting information on stack heights according to the stack height class categories as defined in table 2 below. Parties that do not report combustion emissions under any other international agreement may limit their criteria for Combustion LPS selection to greater than 300 MW thermal capacity.

[6] As defined in art. 2 (4)–(5) of the European Union European Pollutant Release and Transfer Register (E-PRTR) Regulation (Regulation (EC) No. 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC, *Official Journal of the European Union*, L 33 (2006), pp. 1–17): "'facility' means one or more installations on the same site that are operated by the same natural or legal person … 'site' means the geographical location of the facility".

[7] ibid. *Note*: As $PM_{2.5}$ is not specified in the E-PRTR Regulation, it has been added to table 1 of these Guidelines with the same threshold as for PM_{10}.

Table 1
List of pollutants to be reported for a large point source if the applicable threshold value is exceeded, based on thresholds specified in annex II to the European Union European Pollutant Release and Transfer Register Regulation

Pollutants/substances	*Thresholds (kg per year)*
Sulfur (expressed as SO_2)	150 000
NO_x (expressed as NO_2)	100 000
CO	500 000
NMVOCs	100 000
NH_3	10 000
$PM_{2.5}$	50 000
PM_{10}	50 000
Pb	200
Cd	10
Hg	10
PAHs (sum of the four indicator PAHs)	50
PCDD/F	0.0001
HCB	10
PCBs	0.1

Table 2
Stack height classes (physical height of stack) for categorization of large point source emissions reporting

Height class	*Stack height*
1	< 45 m
2	≥ 45 m < 100 m
3	≥ 100 m < 150 m
4	≥ 150 m < 200 m
5	≥ 200 m

10. Emissions from “International navigation” means emissions from fuels used by vessels of all flags engaged in international water-borne navigation. The international navigation may take place at sea, on inland lakes and waterways and in coastal waters. The definition includes emissions from journeys that depart from the territory of one Party and arrive in that of a different Party and excludes consumption by fishing vessels. To ensure consistency of international emission inventory reporting, Parties should make every effort to both apply and report according to the same definitions contained in the *2006 [Intergovernmental Panel on Climate Change] Guidelines for National Greenhouse Gas Inventories*[8] (2006 IPCC Guidelines), or subsequent revised/updated versions of these Guidelines, for separating domestic and international emissions.

[8] Simon Eggleston and others, eds. (Kanagawa, Institute for Global Environmental Strategies, 2006).

11. Emissions from "International aviation" means emissions from flights that depart from the territory of one Party and arrive in that of a different Party. Emissions from international military aviation can be included provided that the same definitional distinction is applied. To ensure consistency of international emission inventory reporting, Parties should make every effort to both apply and report according to the same definitions contained in the 2006 IPCC Guidelines for separating domestic and international emissions.

12. The numeric value of "0" should not be used in the NFR reporting tables, neither should cells be left empty. An appropriate notation key should instead be used from the list below. In the context of the present Guidelines, the following notation keys may be used for reporting purposes:

(a) "NE" (not estimated), for activity data and/or emissions by sources of pollutants that have not been estimated but for which a corresponding activity may occur within a Party. Where NE is used in an inventory to report emissions of pollutants, the Party should indicate in the IIR why such emissions have not been estimated. Furthermore, a Party may consider that a disproportionate amount of effort would be required to collect data for a pollutant from a specific category that would be insignificant in terms of the overall level and trend in national emissions and, in such a case, use the notation key NE. The Party should, in the IIR, provide justifications for its use of NE notation keys, for example, lack of robust data or lack of methodology, etc. Once emissions from a specific category have been reported in a previous submission, emissions from this specific category should be reported in subsequent inventory submissions;

(b) "IE" (included elsewhere), for emissions by sources of pollutants estimated but included elsewhere in the inventory instead of under the expected source category. Where IE is used in an inventory, the Party should indicate, in the IIR, where in the inventory the emissions for the displaced source category have been included, and should explain such a deviation from the inclusion under the expected category, especially if it is due to confidentiality;

(c) "C" (confidential information), for emissions by sources of pollutants the reporting of which could lead to disclosure of confidential information. The source category where these emissions are included should be indicated;

(d) "NA" (not applicable), for activities under a given source category that do occur within the Party but do not result in emissions of a specific pollutant;

(e) "NO" (not occurring), for categories or processes within a particular source category that do not occur within a Party, or are so small that they are considered insignificant;

(f) "NR" (not relevant). According to paragraph 38 below, emission inventory reporting for the main pollutants should cover all years from 1990 onwards if data are available. However, NR is introduced to ease reporting where reporting of emissions is not strictly required by the different protocols; for example, emissions for some Parties prior to agreed base years.

13. For the purposes of reporting projected emissions, "projections with measures" means projections of emissions that encompass the effects, in terms of air pollutant emission reductions, of policies and measures that have been adopted at the time the projection is calculated. "Projections with additional measures" means projections of emissions that encompass the effects, in terms of air pollutant emission reductions, of policies and measures that have been adopted, as well as policies and measures that are planned, at the time the projection is calculated.

14. The "EMEP grid" refers to a 0.1°×0.1° latitude-longitude projection in the geographic coordinate World Geodetic System (WGS) latest revision, WGS 84. The EMEP domain covers the geographic domain between 30°N–82°N latitude and 30°W–90°E longitude.[9]

[9] The Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) Centre on Emission Inventories and Projections has geographical

IV. Scope

15. The Guidelines apply only to Parties within the geographical scope of EMEP, as defined in the 1984 Protocol on Long-term Financing of EMEP,[10] including those Parties whose respective national territories have a part that overlaps with the EMEP emissions reporting grid and another part lying outside the EMEP domain[11] Parties outside the geographical scope of EMEP are invited to take the Guidelines into account when preparing and reporting their annual submissions, and to exchange information similar to that listed in paragraph 17 below.

16. The Guidelines provide guidance for reporting primary emissions (annual, gridded and LPS) and projected emissions data related to the substances specified in paragraphs 7 and 8 above, and define the scope of reporting of emission-related information by Parties. The Guidelines include a number of accompanying annexes. Information to be reported annually is grouped in annexes I–III; information to be reported less frequently is grouped in annexes IV–VII.[12]

17. Parties are required to report on the substances and for the years set forth in the Convention and the protocols that they have ratified and that have entered into force. These reporting requirements are set forth in (see appendix below for full texts of these provisions):

(a) The Convention (art. 8 (a));[13]

(b) The 1985 Helsinki Protocol on the Reduction of Sulfur Emissions or their Transboundary Fluxes by at least 30 per cent (art. 4);

(c) The 1988 Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes (art. 8 (1) (a) and (2));

(d) The 1991 Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes (art. 8);

(e) The 1994 Oslo Protocol on Further Reduction of Sulfur Emissions (art. 5 (1) (b) and (2));

(f) The 1998 Aarhus Protocol on Heavy Metals (arts. 3 (5) and 7 (1) (b)) and (2);

(g) The 1998 Aarhus Protocol on Heavy Metals, as amended on 13 December 2013 (arts. 3 (5) and 7 (1) (b)) and (2);

(h) The 1998 Aarhus Protocol on Persistent Organic Pollutants (arts. 3 (8) and 9 (1) (b));

(i) The 1998 Aarhus Protocol on Persistent Organic Pollutants, as amended on 18 December 2009 (arts. 3 (8) and 9 (1) (b));

(j) The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) (art. 7 (1) (b));

(k) The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol), as amended on 4 May 2012 (arts. 3 (11 ter) and 7 (1) (b)–(d) and (2)).

information system files consistent with this grid definition available for each Party to the Convention on its website (www.ceip.at).

[10] Available at www.unece.org/env/lrtap/emep_h1.html.

[11] For those Parties, reporting requirements in the Guidelines and the annexes thereto referring to "spatial coverage" explicitly indicate whether they refer to: (a) the entire national territory (referred to as the "national total"); (b) that part of the territory overlapping with the EMEP emission reporting grid (referred to as the "total within the EMEP emission reporting grid"); or (c) both options (a) and (b) above.

[12] Annexes I–VII to the Guidelines are available at www.ceip.at/reporting-instructions.

[13] Substances, reporting intervals, spatial resolutions, reporting framework and reporting deadlines referred to in the relevant reporting articles of the Convention and its protocols are further specified in Executive Body decision 2022/2.

V. Methods

A. Emission estimation methods and principles

18. National emission inventories and projected emissions should be transparent, consistent, comparable, complete and accurate, as defined in paragraph 5 above.

19. Parties shall, as a minimum, use the methodologies contained in the latest version of the EMEP/EEA Guidebook, as approved by the Executive Body, to estimate emissions and projections for each source category. Parties can use, as an alternative to the EMEP/EEA Guidebook, national or international methodologies that they consider better able to reflect their national situation, provided that the methodologies produce more accurate estimates than the default methods, are scientifically based, are compatible with the EMEP/EEA Guidebook and are documented in their IIRs, as described in annex II to these Guidelines.

20. Parties should make every effort to develop and/or select emission factors, and collect and select activity data in accordance with the EMEP/EEA Guidebook.

21. For sources that are determined to be key categories in accordance with the EMEP/EEA Guidebook methodologies, Parties should make every effort to use a tier 2 or higher (detailed) methodology, including country-specific information.

22. For emissions from transport, all Parties should calculate emissions consistent with national energy balances reported to Eurostat or the International Energy Agency. Emissions from road vehicle transport should therefore be calculated on the basis of the fuel sold in the Party concerned. In addition, Parties may voluntarily calculate emissions from road vehicles based on fuel used or km driven in the geographic area of the Party. The method for the estimate(s) should be clearly specified in the IIR.

23. For Parties for which emission ceilings or emission reduction commitments are derived from national energy projections based on the amount of fuels sold, compliance checking will be based on fuels sold in the geographic area of the Party. Other Parties within the EMEP region[14] may choose to use the national emission total calculated on the basis of fuels used in the geographic area of the Party as a basis for compliance with their respective emission ceilings or emission reduction commitments.

24. Emissions from domestic and international aviation during the landing and take-off cycle shall be included in the national totals. Cruise emissions from domestic and international aviation shall not be included in national totals and should be reported separately as memorandum items in the annex I reporting template.

25. Emissions from fuels used for international maritime shipping shall not be included in the national totals and should be reported separately as memorandum items in the annex I reporting template. Emissions from international inland shipping shall be included in the national totals for the part that is emitted on national territory.

26. Natural emissions from forest fires, volcanoes, etc., shall not be included in national totals and should be reported separately as memorandum items in the annex I reporting template.

27. Projections of emissions should be estimated and reported in the format set out in annex IV to these Guidelines. Parties to the 1999 Gothenburg Protocol and the 2012 amended Gothenburg Protocol within the geographical scope of EMEP have a mandatory obligation to report such projections under article 7 (1) (b). Parties should provide a "with measures" and, where relevant, a "with additional measures" projection for each pollutant in line with the guidance given in the EMEP/EEA Guidebook. Calculated projections should be consistent with the data in the last year of the time series in the inventory submission made in the same year, or one year previously. Methodologies and assumptions for projections should be transparent and should allow for an independent review of data. For Parties within

[14] I.e. Austria, Belgium, Ireland, Lithuania, Luxembourg, the Netherlands, Switzerland and the United Kingdom of Great Britain and Northern Ireland.

the European Union, reported projections should, as far as appropriate, be consistent with those compiled under the European Union Greenhouse Gas Emissions Reporting Regulation.[15]

28. Emission data calculated by Parties within the geographic scope of EMEP shall be spatially allocated in the EMEP grid as defined in paragraph 14 above. Spatially allocated emissions (gridded data) may be calculated using national data sets appropriate to each Gridding NFR (GNFR) source category (as defined in annex V to these Guidelines) in accordance with the EMEP/EEA Guidebook. The sum of the emissions reported in the GNFR gridded data sets should be consistent with the data reported in the national emission inventory (NFR) tables.

29. As far as possible, reported LPS data (as defined in para. 9 above) should be consistent with emissions data reported in the national emission inventory and with that available under the United Nations Economic Commission for Europe (ECE) Protocol on Pollutant Release and Transfer Registers to the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and relevant European Union legislation (e.g., the E-PRTR).

B. Key categories and uncertainties

30. Parties shall identify national key categories in accordance with the EMEP/EEA Guidebook for the latest inventory year. Such information should be described in the IIR.

31. Parties shall quantify uncertainties in their emission estimates using the most appropriate methodologies available, taking into account guidance provided in the EMEP/EEA Guidebook. Uncertainties should be described in the IIR.

C. Quality assurance/quality control

32. Procedures for quality assurance and quality control shall be implemented during the planning, preparation and management of the national inventories and should be documented in the IIR. Examples of adequate quality assurance and quality control procedures are those set out in the EMEP/EEA Guidebook and those accepted by IPCC for greenhouse gas inventories (i.e. currently the 2006 IPCC Guidelines).

D. Recalculations and time series consistency

33. The aim of recalculations is to ensure consistency of the time series and thus improve the accuracy and completeness of the emission inventory. A complete time series, including the base or reference year and all other years for which emissions and projections are to be reported, should be calculated using the same methodologies throughout the time series to ensure that the inventory reflects real changes in emissions rather than changes in methodologies. Recalculations should be made if there are changes in methodologies or changes in the manner in which emission factors and activity data are obtained or used, or if estimates are provided for sources that have existed since the reference year but that were not accounted for in previous submissions. Parties should apply any recalculations to every relevant year in the full time series to ensure consistency across years.

34. In cases where activity data or other data cannot be obtained for certain years, including the reference year, emissions should be estimated using alternative methodologies or appropriate techniques for estimating activity levels or emissions for these years, taking into account guidance provided in the EMEP/EEA Guidebook. In these instances, Parties

[15] Regulation (EU) No. 525/2013 of the European Parliament and of the Council of 21 May 2013 on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change and repealing Decision No. 280/2004/EC, *Official Journal of the European Union*, L 165 (2013), pp. 251–278 (or subsequent revised/updated versions thereof).

should ensure that the time series is consistent and significant fluctuations between years are explained in the IIR.

E. Reporting of national inventories that include the use of flexibility mechanisms

35. Inventories shall be calculated without corrections or normalization relating, for example, to climate variations or trade patterns of electricity.

36. Parties may apply to use one or more flexibility mechanisms to change their emission reduction commitments[16] or inventory data in extraordinary circumstances, as defined in Executive Body decisions 2012/3 and 2012/4.

37. Guidance on the application process for the adjustment flexibility mechanism (applied to adjust either an emission reduction commitment or an emission inventory) is available separately in Executive Body decision 2012/12 and amended by Executive Body decision 2014/1. A Party applying an adjustment to its inventory for the purpose of comparing total national emissions with emission reduction commitments[17] shall include supporting documentation in its IIR or in a separate report. The IIR template (annex II to these Guidelines) lists the supporting information required. In addition, quantitative information shall be submitted as an Excel file (annexes II and IIa[18] to ECE/EB.AIR/130). Furthermore, for previously approved adjustments,[19] Parties shall report details of their adjusted aggregated emissions using the appropriate row contained in the main emissions reporting template (annex I to these Guidelines), as well as report detailed information by pollutant and sector for each adjustment using the template provided in annexes VII and VIIa[20] to these Guidelines. Reporting of information on adjusted emissions in no way removes the mandatory requirement for Parties to report unadjusted emissions as laid down in section V (A)–(D) above.

VI. Reporting

A. General

38. Emission inventory reporting shall cover all years from 1990 onwards, or from the relevant reference year when other than 1990, for those Parties that have ratified protocols for which reporting of reference year emissions is required. Emission inventory reporting of PM should cover all years from 2000 onward. Parties are strongly encouraged to report their emission inventory for BC from the earliest year possible using the methodologies contained in the latest version of the EMEP/EEA guidebook, as appropriate.[21] Emission and activity data should be reported up until the latest inventory year, which shall be calculated as "x-2", where "x" is the year in which reporting occurs. For example, for reporting in 2022, emission and activity data for the years 1990–2020 would be reported. Parties may voluntarily report data for years prior to 1990, and for PM for years prior to 2000.

[16] Emission ceilings (rather than emission reduction commitments) for Parties that are signatories to the Gothenburg Protocol but not the amended Gothenburg Protocol.

[17] Idem.

[18] Available at www.ceip.at/technical-guidance-adjustments-erc.

[19] "Previously approved adjustments" refers to adjustments previously approved within the same version of the Gothenburg Protocol. A Party making its first adjustment application under the amended Gothenburg Protocol is therefore defined as having no previously approved adjustments.

[20] Annex VIIa has not yet been finalized, because Parties have not yet needed to report previously approved adjustments within an emission reduction commitment framework; it will be prepared before it is needed for reporting purposes.

[21] Each Party to the amended Gothenburg Protocol should, to the extent it considers appropriate, also develop and maintain inventories and projections for emissions of black carbon, using guidelines adopted by the Executive Body (art. 6 (2 bis) of amended Gothenburg Protocol).

39. Recalculated data for previous years should be included in any reported emission time series. Criteria for recalculations are outlined in paragraph 33 above. Parties are encouraged to submit recalculated data both on a sectoral and a gridded basis. Parties should provide justification for any recalculation and describe in the IIR the methods used to ensure time series consistency, changes in the data and calculation methods, and the inclusion of any new sources not previously accounted for, indicating any relevant changes in the source category.

40. Where Parties do not have sufficiently detailed data to allow for estimation of individual source categories in their inventory or projections, they may report aggregated emissions. Aggregated emissions may be reported under "other" or under the most significant single sector within the aggregation. Where aggregated emissions are reported, the available notes columns shall be annotated to explain which detailed sectors are included and the notation key "IE" shall be used for sectors that have emissions reported elsewhere. A rationale for reporting aggregated emissions should be included in the IIR.

41. Reporting guidance covers deadlines for submission of data, preparation of templates and electronic submissions of data, as follows:

(a) *Reporting deadlines*: The deadline for submitting annual emission inventory reports is 15 February. The deadline for submitting four-yearly projection reports is 15 March. The deadline for submitting the IIR is 15 March. Parties are, however, encouraged to submit their IIRs at the same time as their emission reports. The deadline for submitting gridded data and LPS data is 1 May. The European Union may deliver its emission and projections reports by 30 April, its IIR by 30 May and its gridded data and LPS data by 15 June;

(b) *Reporting templates*: Parties shall use the reporting templates contained in annexes I–VII to these Guidelines, or other harmonized reporting options as specified below. Submissions reported in formats other than the agreed templates may not be considered for use in EMEP activities;

(c) *Submission of data by electronic means*: Data submissions shall be transmitted electronically to the EMEP Centre for Emission Inventories and Projections (CEIP), and may be made to a central data repository[22] provided that the Party informs CEIP that this has been done and that the submission is consistent with these Guidelines. In addition, the completed notification template (annex III to these Guidelines) shall be sent by post or email to the Convention secretariat, with a copy to CEIP.

42. Resubmissions due to errors should be received within four weeks from the original due date for submission and must include a clear explanation of the changes made. Resubmissions received later than four weeks from the due date for submission will only exceptionally be considered for use in EMEP activities for that reporting period.

B. Annual reporting

43. Parties that have obligations to report emission inventories of substances listed in paragraph 7 above under protocols that they have ratified and that are in force shall annually report emission inventories of those substances in accordance with the deadlines set forth in paragraph 41 (a) above. In addition, Parties are strongly encouraged to annually report emission inventories of BC. Parties are also encouraged to report emission inventories of the other substances listed in paragraph 8 above, as appropriate. Annual reporting shall include national emissions and should include activity data for the sectors identified in annex I to these Guidelines for the years indicated. Parties should complete the tables at the requested level of aggregation. Where values for individual NFR categories are not available, the notation keys described in paragraph 12 above shall be used.

[22] For example, the Central Data Repository of the European Environment Agency European Environment Information and Observation Network (http://cdr.eionet.europa.eu/).

44. Parties are strongly encouraged to submit the IIR.[23] The IIR should be submitted annually. However, certain elements of the report (as indicated in annex II to these Guidelines) may be updated less frequently, as appropriate. Together with the IIR, the "Declaration on the publication of the IIR" – available from CEIP – should be submitted.

C. Four-yearly reporting

45. Parties to the 1999 Gothenburg Protocol and 2012 amended Gothenburg Protocol within the geographical scope of EMEP shall regularly update their projections and report every four years from 2015 onward their updated projections, for the years 2025 and 2030 and, where available, also for 2040 and 2050.[24] Parties to the other protocols are encouraged to regularly update their projections and report every four years from 2015.

46. Projected emissions for substances listed in paragraph 7 above and, where appropriate, BC, should be reported using the template contained in annex IV to these Guidelines. Parties should complete the tables at the requested level of aggregation. Where values for individual categories are not available, the notation keys defined in paragraph 12 above should be used.

47. Quantitative information on parameters underlying emission projections should be reported using the templates set out in annex IV to these Guidelines. These parameters should be reported for the projection target year and the historic year chosen as the starting year for the projections.

48. Every four years from 2017 onward, Parties shall report for the year x-2 updated sectoral (GNFR) gridded emissions and LPS emissions as defined in paragraphs 7, 9 and 14 and table 1 above. Gridded emissions in a grid of 0.1° x 0.1° shall be reported for all substances referred to in paragraph 7 above. LPS emissions shall be reported for all substances referred to in table 1 above, taking into account the defined release thresholds. Parties are encouraged to update their gridded and LPS data and report annually where changes in spatial patterns have occurred, so that the EMEP models can represent the most up-to-date information.

49. Gridded emissions for each GNFR sector (as defined in annex V to these Guidelines) shall be provided for the EMEP latitude-longitude coordinate resolution (as defined in para. 14 above) that overlie the Party's territory.

50. LPS emissions shall be reported using the template provided in annex VI to these Guidelines. For the purposes of reporting under the Convention and its protocols, Parties may aggregate the emissions from individual locations/processes within the facility as long as they are consistent with the GNFR sectors (see annex V to these Guidelines) and may separate emissions according to the appropriate stack height classes identified in table 2 above.

51. Parties may report LPS data through the provision of electronic copies of Point Sources Reports provided under any other international or European Union legislation, as long as the following provisions are met:

(a) The coordinates (latitude and longitude) are included;

(b) The stack height class is included;

(c) Emissions of the specified substances are included;

(d) Where available, the E-PRTR facility identification code (FacilityID) or the European Union Emissions Trading System[25] identifier is included;

(e) Emissions must be consistent with the annual inventory submitted under the Convention, in accordance with these Guidelines;

[23] Parties to the amended Gothenburg Protocol shall report an IIR (art. 7 (1) (b) (iv) of amended Gothenburg Protocol), exceptions to this are noted in article 7 (1) of the amended Gothenburg Protocol.

[24] Parties are not required to report projections for those years in which emissions data are reported as part of the annual inventory reporting.

[25] See https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en.

(f) A clear explanation of the process and source sector must be given, including their relationship to the GNFR sector presented in annex V to these Guidelines, to avoid double counting.

VII. Record keeping

52. Parties should archive all relevant emission information for each year, including, as far as practicable, all disaggregated emission factors, activity data and documentation about how these factors and data have been generated and aggregated for reporting. This information should allow the reconstruction of the inventory and projections, inter alia, for the purpose of inventory review and its evaluation for use by the Implementation Committee, as well as transparency for users. Inventory information, including the corresponding data on any recalculations, should be archived for all years from the reference year. Parties are encouraged to collect and archive the information in a single location, or at least to keep the number of locations to a minimum.

VIII. Languages

53. IIRs shall be submitted in one of the official languages of ECE (i.e. English, French or Russian). Where possible, Parties submitting IIRs in French and Russian are encouraged to also provide an English translation to facilitate their use by the emission inventory expert review teams.

IX. Updating of the Guidelines

54. The present Guidelines are subject to review and revision, as decided by the Executive Body. The Task Force on Emission Inventories and Projections may, if necessary, propose amendments to the Steering Body to EMEP to achieve harmonization with other reporting obligations, as well as to meet needs for increased transparency or other needs for further revision. The Task Force should transmit to the Steering Body any problems or discrepancies encountered by emissions experts in the application of the Guidelines.

Appendix

Emission reporting requirements in the Convention and its protocols

Parties are required to report on the substances and for the years set forth in the Convention and its protocols that they have ratified and that have entered into force. The full texts of the reporting requirements for each instrument are set out below.

Convention on Long-range Transboundary Air Pollution (art. 8 (a))

Article 8

EXCHANGE OF INFORMATION

The Contracting Parties, within the framework of the Executive Body referred to in article 10 and bilaterally, shall, in their common interests, exchange available information on:

(a) Data on emissions at periods of time to be agreed upon, of agreed air pollutants, starting with sulfur dioxide, coming from grid-units of agreed size; or on the fluxes of agreed air pollutants, starting with sulfur dioxide, across national borders, at distances and at periods of time to be agreed upon;

1985 Helsinki Protocol on the Reduction of Sulfur Emissions or their Transboundary Fluxes by at least 30 per cent (art. 4)

Article 4

REPORTING OF ANNUAL EMISSIONS

Each Party shall provide annually to the Executive Body its levels of national annual sulfur emissions, and the basis upon which they have been calculated.

1988 Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes (art. 8 (1) (a) and (2))

Article 8

INFORMATION EXCHANGE AND ANNUAL REPORTING

1. The Parties shall exchange information by notifying the Executive Body of the national programmes, policies and strategies that they develop in accordance with article 7 and by reporting to it annually on progress achieved under, and any changes to, those programmes, policies and strategies, and in particular on:

(a) The levels of national annual emissions of nitrogen oxides and the basis upon which they have been calculated;

…

2. Such information shall, as far as possible, be submitted in accordance with a uniform reporting framework.

1991 Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes (art. 8)

Article 8

INFORMATION EXCHANGE AND ANNUAL REPORTING

1. The Parties shall exchange information by notifying the Executive Body of the national programmes, policies and strategies that they develop in accordance with article 7, and by reporting to it progress achieved under, and any changes to, those programmes, policies and strategies. In the first year after entry into force of this Protocol, each Party shall report on the level of emissions of [volatile organic compounds] in its territory and any [tropospheric ozone management area] in its territory, by total and, to the extent feasible, by sector of origin and by individual [volatile organic compound], according to guidelines to be

specified by the Executive Body for 1988 or any other year taken as the base year for article 2.2 and on the basis upon which these levels have been calculated.

2. Furthermore each Party shall report annually:

(a) On the matters specified in paragraph 1 for the previous calendar year, and on any revision which may be necessary to the reports already made for earlier years;

(b) On progress in applying national or international emission standards and the control techniques required under article 2, paragraph 3;

(c) On measures taken to facilitate the exchange of technology.

3. In addition, Parties within the geographical scope of EMEP shall report, at intervals to be specified by the Executive Body, information on [volatile organic compound] emissions by sector of origin, with a spatial resolution, to be specified by the Executive Body, appropriate for purposes of modelling the formation and transport of secondary photochemical oxidant products.

4. Such information shall, as far as possible, be submitted in accordance with a uniform reporting framework.

1994 Oslo Protocol on Further Reduction of Sulfur Emissions (art. 5 (1) (b) and (2))

Article 5

REPORTING

1. Each Party shall report, through the Executive Secretary of the Commission, to the Executive Body, on a periodic basis as determined by the Executive Body, information on:

...

(b) The levels of national annual sulfur emissions, in accordance with guidelines adopted by the Executive Body, containing emission data for all relevant source categories;

...

2. Each Party within the geographical scope of EMEP shall report, through the Executive Secretary of the Commission, to EMEP, on a periodic basis to be determined by the Steering Body of EMEP and approved by the Parties at a session of the Executive Body, information on the levels of sulfur emissions with temporal and spatial resolution as specified by the Steering Body of EMEP.

1998 Aarhus Protocol on Heavy Metals (arts. 3 (5) and 7 (1) (b) and (2)) and 1998 Aarhus Protocol on Heavy Metals as amended on 13 December 2012 (arts. 3 (5) and 7 (1) (b) and (2))

Article 3

BASIC OBLIGATIONS

...

5. Each Party shall develop and maintain emission inventories for the heavy metals listed in annex I, for those Parties within the geographical scope of EMEP, using as a minimum the methodologies specified by the Steering Body of EMEP, and, for those Parties outside the geographical scope of EMEP, using as guidance the methodologies developed through the work plan of the Executive Body.

…

Article 7

REPORTING

1. Subject to its laws governing the confidentiality of commercial information:

...

(b) Each Party within the geographical scope of EMEP shall report to EMEP, through the Executive Secretary of the Commission, information on the levels of emissions of heavy metals listed in annex I, using the methodologies specified in guidelines prepared by the Steering Body of EMEP and adopted by the Parties at a session of the Executive Body. Parties in areas outside the geographical scope of EMEP shall report available information on levels of emissions of the heavy metals listed in annex I. Each Party shall also provide information on the levels of emissions of the substances listed in annex I for the reference year specified in that annex;

…

2. The information to be reported in accordance with paragraph 1 (a) above shall be in conformity with a decision regarding format and content to be adopted by the Parties at a session of the Executive Body. The terms of this decision shall be reviewed as necessary to identify any additional elements regarding the format or the content of the information that is to be included in the reports.

1998 Aarhus Protocol on Persistent Organic Pollutants (arts. 3 (8) and 9 (1) (b)) and 1998 Aarhus Protocol on Persistent Organic Pollutants, as amended on 18 December 2009 (arts. 3 (8) and 9 (1) (b))

Article 3

BASIC OBLIGATIONS

...

8. Each Party shall develop and maintain emission inventories for the substances listed in annex III, and shall collect available information relating to the production and sales of the substances listed in annexes I and II, for those Parties within the geographical scope of EMEP, using, as a minimum, the methodologies and the spatial and temporal resolution specified by the Steering Body of EMEP, and, for those Parties outside the geographical scope of EMEP, using as guidance the methodologies developed through the work plan of the Executive Body. It shall report this information in accordance with the reporting requirements set out in article 9 below.

…

Article 9

REPORTING

1. Subject to its laws governing the confidentiality of commercial information:

...

(b) Each Party within the geographical scope of EMEP shall report, through the Executive Secretary of the Commission, to EMEP, on a periodic basis to be determined by the Steering Body of EMEP and approved by the Parties at a session of the Executive Body, information on the levels of emissions of persistent organic pollutants using, as a minimum, the methodologies and the temporal and spatial resolution specified by the Steering Body of EMEP. Parties in areas outside the geographical scope of EMEP shall make available similar information to the Executive Body if requested to do so. Each Party shall also provide information on the levels of emissions of the substances listed in annex III for the reference year specified in that annex.

1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (art. 7 (1) (b))

Article 7

REPORTING

1. Subject to its laws and regulations and in accordance with its obligations under the present Protocol:

...

(b) Each Party within the geographical scope of EMEP shall report, through the Executive Secretary of the Commission, to EMEP, on a periodic basis to be determined by the Steering Body of EMEP and approved by the Parties at a session of the Executive Body, the following information:

(i) Levels of emissions of sulfur, nitrogen oxides, ammonia and volatile organic compounds using, as a minimum, the methodologies and the temporal and spatial resolution specified by the Steering Body of EMEP;

(ii) Levels of emissions of each substance in the reference year (1990) using the same methodologies and temporal and spatial resolution;

(iii) Data on projected emissions and current reduction plans; and

(iv) Where it deems it appropriate, any exceptional circumstances justifying emissions that are temporarily higher than the ceilings established for it for one or more pollutants.

1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, as amended on 4 May 2012 (arts. 3 (11 ter) and 7 (1) (b)–(d) and (2))

Article 3

BASIC OBLIGATIONS

…

11 ter. Each Party shall develop and maintain inventories and projections for the emissions of sulfur dioxide, nitrogen oxides, ammonia, volatile organic compounds, and particulate matter. Parties within the geographic scope of EMEP shall use the methodologies specified in guidelines prepared by the Steering Body of EMEP and adopted by the Parties at a session of the Executive Body. Parties in areas outside the geographic scope of EMEP shall use as guidance the methodologies developed through the workplan of the Executive Body.

…

Article 7

REPORTING

1. Subject to its laws and regulations and in accordance with its obligations under the present Protocol:

…

(b) Each Party within the geographical scope of EMEP shall report to EMEP through the Executive Secretary of the Commission the following information for the emissions of sulfur dioxide, nitrogen oxides, ammonia, volatile organic compounds and particulate matter on the basis of guidelines prepared by the Steering Body of EMEP and adopted by the Executive Body:

(i) Levels of emissions using, as a minimum, the methodologies and the temporal and spatial resolution specified by the Steering Body of EMEP;

(ii) Levels of emissions in the reference year specified in annex II using the same methodologies and temporal and spatial resolution;

(iii) Data on projected emissions; and

(iv) An Informative Inventory Report containing detailed information on reported emission inventories and emission projections;

(b bis) Each Party within the geographical scope of EMEP should report available information to the Executive Body, through the Executive Secretary of the Commission, on its air pollution effects programmes on human health and the environment and atmospheric monitoring and modelling programmes under the Convention, using guidelines adopted by the Executive Body;

(c) Parties in areas outside the geographical scope of EMEP shall report available information on levels of emissions, including for the reference year as specified in annex II and appropriate to the geographic area covered by its emission reduction commitments. Parties in areas outside the geographical scope of EMEP should make available information similar to that specified in subparagraph (b bis), if requested to do so by the Executive Body;

(d) Each Party should also report, where available, its emissions inventories and projections for emissions of black carbon, using guidelines adopted by the Executive Body.

2. The information to be reported in accordance with paragraph 1 (a) shall be in conformity with a decision regarding format and content to be adopted by the Parties at a session of the Executive Body. The terms of this decision shall be reviewed as necessary to identify any additional elements regarding the format or the content of the information that is to be included in the reports.